

In the claims:

Please cancel claims 1-12 and add new claims 13-15 as follows:

13 (New) An activated sludge wastewater treatment apparatus for use in a wastewater treatment facility including an aeration vessel having a plurality of aeration zones, a settling vessel, and a digestion vessel, said apparatus comprising:

said aeration vessel having approximately 20 percent to 45 percent of its total volume comprising one or more reaeration zones;

a sludge return line to transport activated sludge from said settling vessel to said one or more reaeration zones; the return activated sludge flow rate being less than 60 percent of the wastewater influent flow rate;

a supernatant return line for adding supernatant from said digestion vessel to said one or more reaeration zones; and

wherein the concentration of mixed liquor suspended solids in said aeration vessel is maintained so that the ratio of MLSS between said reaeration zones and the other aeration zones is greater than 1:1; and

wherein the average influent volumetric loading capacity is greater than approximately 3.2 kg BOD₅/m³day.

14 (New) An activated sludge wastewater treatment facility having an aeration vessel with a plurality of aeration zones, a settling vessel and a digestion vessel, said facility comprising:

said aeration vessel having approximately 20 percent to 45 percent of its volume comprising one or more reaeration zones;

a supernatant return line adding a portion of the supernatant from said digestion vessel to said one or more reaeration zones;

a sludge return line for returning activated sludge from said settling vessel to a portion of the reaeration zones; the return activated sludge flow rate being less than 60 percent of the wastewater influent flow rate to the aeration vessel; and

wherein the concentration of dissolved oxygen in said aeration vessel is controlled so that the typical concentration of dissolved oxygen at the downstream end of said portion of said reaeration zones is generally at least three times the concentration of dissolved oxygen at the downstream end of the other of said reaeration zones;

wherein the concentration of mixed liquor suspended solids in said aeration vessel is controlled so that the ratio of MLSS between said reaeration zones and the other aeration zones is greater than 1:1; and

wherein the average influent volumetric loading capacity of said facility is greater than approximately 3.2 kg BOD₅/m³day and said facility has an average nutrient removal rate greater than 0.005 lbs nitrogen per lb volatile suspended solids.

15 (New) An apparatus for the treatment of wastewater comprising:

means for combining an influent wastewater stream and an activated sludge in a primary aeration reactor thereby creating an aerated mixed liquor;

means for transferring said aerated mixed liquor to a settling basin and withdrawing from said settling basin an effluent stream and an activated sludge stream;

means for transferring a portion of said activated sludge stream to a first reaeration reactor thereby generating a first reaeration liquor which is returned to said primary aeration reactor;

means for transferring a portion of said activated sludge stream to a second reaeration reactor thereby generating a second reaeration liquor which is returned to said primary aeration reactor;

means for transferring a portion of said activated sludge stream to said primary aeration reactor;

means for transferring a portion of said activated sludge stream to a digestion phase; and

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means for transferring a portion of the contents from said digestion phase to said second reaeration reactor;

wherein the flow rate of said activated sludge stream is between 20 percent and about 60 percent of the flow rate of said influent wastewater stream.

In the Drawings:

Please substitute the enclosed FIGURES 1, 2, 3 and 5 for the Figures originally filed.